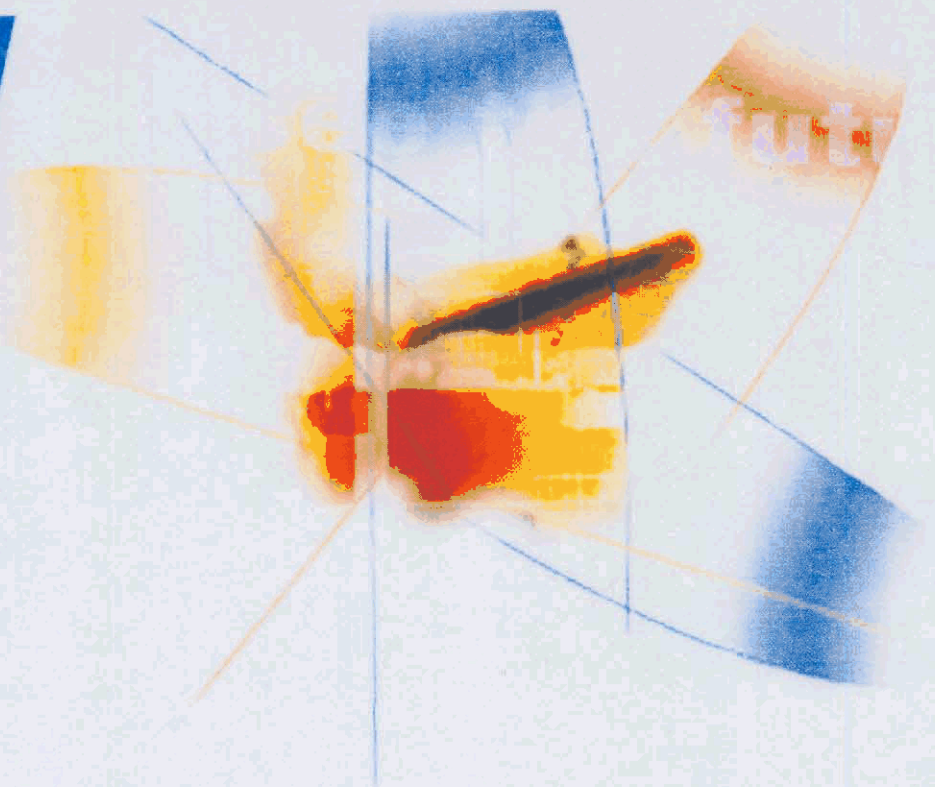
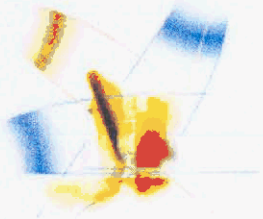


cellnet



902-928 MHz Part 15
ET Docket No. 03-201
Petition for Reconsideration





Why Cellnet Is Taking the Lead

- Cellnet is one of the leaders in the automated meter reading (AMR) and system control and distribution automation (SCADA) industries
- Cellnet has one of the largest networks deployed in USA using 902-928 MHz Part 15 Band: Over 10 million devices
- Cellnet actually owns and operates the majority of its deployed devices under outsourcing contracts and, thus, is in contact with them on a constant basis
- Because of Cellnet's size and business model, Cellnet is often one of the first companies to see trends and effects in the 902-928 MHz Band, and Cellnet is often the leader in protecting this Band for all users



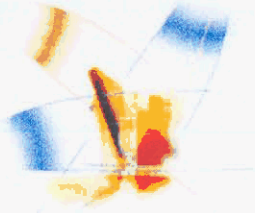
Why There Is A Problem

- The 902-928 MHz unlicensed Part 15 Band contains a multitude of varied devices co-existing for the last two decades
- FCC rule changes adopted in 2002 in ET Docket No. 99-231 opened the door for production of 902-928 MHz Band devices which can broadcast (1) always on (very high duty cycle) and (2) always at 1 watt maximum power level, and (3) no longer restricted to spread spectrum broadcast methods (could use digital modulation instead)
- These new rules were premised on a conclusion that “systems using digital modulation techniques can operate under the same rules as direct sequence spread spectrum devices in the 915 MHz, 2.4 GHz, and 5.7 GHz band without posing additional risk of interference.”
- However, this new combination of “always on” plus “always maximum power” plus “no spread spectrum” has permitted new disruptive devices to take advantage of these new rules in a fashion that does not permit co-existence in this Band – they interfere with all 902-928 MHz devices in their vicinity
- There is no way to engineer devices to avoid this disruptive interference – therefore a change in the rules is justified



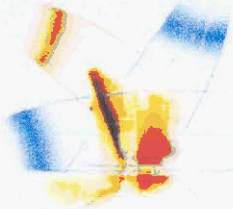
Implications of Disruptive Devices on Cellnet

- Cellnet's devices are engineered to minimize interference to other Band devices and to minimize the effect of other Band devices on them
- However, the new "always on" and "always maximum power" interfering devices are disruptive of Cellnet deployed devices within their vicinity, and it is impossible for Cellnet to design around this interference
- Potential effects of these disruptive devices on Cellnet's AMR operations:
 - USA's utility industry may be severely disrupted - millions of households may not be able to be billed for service
 - Electric utilities may suffer black-outs – they depend on Cellnet data for load control and key operational information
- Cellnet's SCADA operations:
 - Electric utility networks may fail – blackouts, blowing gas lines, or worse
 - Water and sewage plants and reservoirs may fail, overflow, suffer contamination



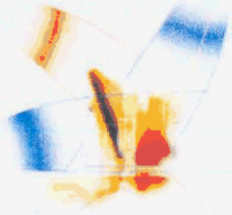
Implications of Disruptive Devices on USA Energy Policy

- **Federal Energy Policy Act of 2005, P.L. 109-58**
 - Enacted “Smart Metering” requirements (Sec. 1252; 16 USC 2621(d)(14))
 - “It is the policy of the United States that time-based pricing and other forms of demand response [delivered via AMR] ... shall be encouraged, and the deployment of such technology and devices that enable electricity customers to participate in such pricing and demand response systems shall be facilitated ...” 16 USC 2642(f)
- **The majority (approx 70%) of all electricity AMR devices deployed in the field operate in the 902-928 MHz Band:**
 - Electric meters - over 30 million being read by 902-928 Band radios
 - Non-Electric (gas and water) meters - over 30 million meters being read by 902-928 MHz Band radios



Implications of Disruptive Devices on Non-Cellnet Devices

- According to FCC, “millions” of other non-disruptive devices have been designed and deployed in the 902-928 MHz Band “without any significant interference”
- Just like Cellnet’s devices, these existing devices are engineered to minimize the interference they cause and to deal with interference to them from other 902-928 MHz devices
- Just like Cellnet’s devices, these existing devices cannot be re-engineered to avoid the interference caused by the new disruptive “always on” and “always maximum power” devices
- Many of these existing devices which are now at risk are listed on the following slides, many in critical applications (health, safety & national security)



Implications of Disruptive Devices on Non-Cellnet Devices

- **Medical Products**
 - Wireless physiological monitoring devices
 - Wireless medical alert systems
- **Public Traffic Safety**
 - Traffic signal communicators
 - Vehicle access systems
 - Parking management systems
 - Emergency callers
- **National Security**
 - Physical access systems
 - Law enforcement surveillance systems
- **Home Security**
 - Baby monitors
 - Wireless camera security systems



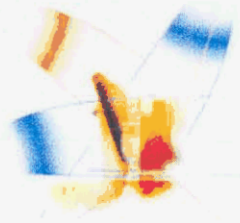
Implications of Disruptive Devices on Non-Cellnet Devices

- **Environmental and Scientific Devices**
 - Wireless weather stations (rain, wind, temperature, etc.)
 - Soil monitoring devices
 - Other environmental monitoring devices
- **Industrial Devices**
 - Factory monitoring and control
 - Hazardous environment communication (earthquake zones)
- **Inventory Control / Asset Tracking Devices**
 - RFID tags and readers
 - Shopping cart tracking systems
- **Other AMR Devices (competitors of Cellnet)**
- **Other SCADA Devices (competitors of Cellnet)**



Implications of Disruptive Devices on Non-Cellnet Devices

- **High Tech Devices**
 - Wireless computer communications
 - Wireless computer devices (such as mice & keyboards)
- **Communication Devices**
 - Cordless telephones
 - Cordless answering machines
 - Wireless intercoms
- **Entertainment Devices**
 - Wireless headphone devices
 - Wireless speaker systems
 - Wireless video game controllers and devices
 - Radio controlled toys
- **Miscellaneous Devices**
 - Wireless presentation remotes



Cellnet's Procedural Posture - Request For A New Rule

- **Original Action:** As part of the FCC's rulemaking procedure for several unrelated matters in 2004, the FCC considered adopting safeguard rules for the heavily utilized 902-928 MHz unlicensed Part 15 Band, but the FCC eventually did not adopt those safeguards as part of the new 2004 rules promulgated
- FCC premised conclusion on view that "It appears that the existing regulations have resulted in very efficient use of available unlicensed spectrum."
- Experience with recently developed Part 15 devices utilizing digital modulation indicates that existing rules are no longer adequate
- **Cellnet Petition:** Cellnet petitioned the FCC for reconsideration of that rulemaking in Oct 2004
- **Rulemaking Requested:** Cellnet is seeking adoption of rules to ensure continued efficiency of sharing in this Band – the proposed rules would institute a duty cycle or other sharing protocols to avoid one user eliminating any other use in an area